



U.S. Army Research Institute for the Behavioral & Social Sciences

# FACT SHEET



## After Action Review: Methods And Tools

Like combat, collective training exercises are complex events where the causal connections between individual performance, weapons effects, and mission outcomes are obscured by the uncertainty, confusion, and stress of battle. Thus, the answer to the question, "How did the unit do?" may not be immediately obvious to the exercise participants or to those who control and observe collective training exercises. However, to derive training value from these exercises requires detailed feedback to the unit on their individual and collective performance and their relation to combat outcomes.

The after action review (AAR) is the Army's method for providing performance feedback from a collective training exercise. As defined in Training Circular 25-20, an AAR "...is a professional discussion of an event focused on performance standards, that enables soldiers to discover for themselves what happened, why it happened, and how to sustain strengths and improve on weaknesses." In other words the units perform a collective self-examination in which the general question "How did the unit do?" is addressed by examining what happened, why it happened, and exploring how performance could be improved.

The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) has performed much of the research and development for the AAR. ARI's involvement with the AAR developed in tandem with its research in support of Army Tactical Engagement Simulation (TES) systems. Tactical engagement simulation provides a means for objective rather than subjective measurement of combat outcomes. The AAR was to be a means to discuss battle processes and outcomes in an objective and non-punitive atmosphere. ARI has developed specialized AAR methods to meet the needs of specific Army training environments.

The first ARI product was a guide for Army leaders to conduct AARs for units training with REALTRAIN, an



early TES system. A later guidebook was published for conducting AARs at the National Training Center, in its instrumented range, force on force training environment. AAR guides were also written for trainers using the Multiple Laser Engagement Simulation (MILES) system at their home station, and for the ART-BASS battalion level constructive simulation.

The development of man-in-the-loop virtual simulations, such as Simulation Networking (SIMNET) and the Close Combat Tactical Trainer (CCTT), provided opportunities for collecting detailed performance data on which to base the "what happened?" part of the AAR. ARI has led the development of AAR data collection and analysis systems for virtual unit training. ARI developed the Unit Performance Assessment system, the first AAR tool, for SIMNET. It collected data, organized the data in a relational database, and used the database to generate AAR aids that illustrated key aspects of unit performance. One weakness of the UPAS approach was that the job of preparing AAR aids could not begin until an exercise ended, making it difficult to support timely feedback. Another problem with that UPAS approach was that it left the job of identifying and developing AAR aids completely up to the trainers. The next generation, virtual AAR tool, the Automated Training Analysis

and Feedback System (ATAFS) was able to provide automatically and manually generated candidate AAR aids immediately at the end of an exercise. ATAFS employed computer multi-tasking capabilities and a knowledge database to generate aids as the exercise was still underway. Many of the features of ATAFS are being included in an upgrade to the CCTT AAR system that is currently in development.

ARI has also examined the impacts of digitization on automated AAR aid production for the live and virtual environments, and personnel monitored a Small Business Innovation Research project that successfully demonstrated the capability to automatically create AAR aids for a sample of digital skills. ARI's current efforts in this area are concerned with developing the measures of performance needed to apply this new technical capability to additional digital skills.

At the request of the U.S. Army Training and Doctrine Command (TRADOC) Army Training Modernization

Directorate (ATMD), ARI has been examining the possibilities for automating AAR aid production in the live combat training center and home station training environments. Also at the request of TRADOC-ATMD, ARI has been examining the potential impacts of force modernization on the AAR aid preparation process. Information from these studies is being used by TRADOC and the Simulation, Training, and Instrumentation Command (STRICOM) to develop an objective instrumentation system (OIS) for combat training centers and home stations that will reduce the AAR aid preparation workload, while improving the feedback value of AAR aids.

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